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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/964,086	09/26/2001	William E. Richeson	CEQ01 P333	2451

277 7590 12/28/2007

PRICE HENEVELD COOPER DEWITT & LITTON, LLP
695 KENMOOR, S.E.
P O BOX 2567
GRAND RAPIDS, MI 49501

EXAMINER	
ROJAS, BERNARD	
ART UNIT	**PAPER NUMBER**
2832	

MAIL DATE	DELIVERY MODE
12/28/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	09/964,086	RICHESON, WILLIAM E.	
	Examiner	Art Unit	
	Bernard Rojas	2832	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *15 October 2007*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-22,32-35,37-43 and 45-47* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) *1-22* is/are allowed.

6)☒ Claim(s) *32-35,37-43 and 45-47* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Allowable Subject Matter

The indicated allowability of claims 32-35, 37-43, 45, 46 and 47 is withdrawn in consideration to previously applied Groove (US 4,004,262). Rejections based on the newly cited reference(s) follow.

Claims 1-22 are allowed.

The following is a statement of reasons for the indication of allowable subject matter:

Claim 1, the prior art of record does not teach nor suggest, in the claimed combination, an electromagnet for use in a brake with a polymer impregnated powder metal core with the claimed Young's modulus of elasticity between 6.8 to 29.5 million psi, and an injection molded material with a donor material having an elasticity greater than 2 million psi, attached to the powder metal core.

Claim 3, the prior art of record does not teach nor suggest, in the claimed combination, an electromagnet for use in a brake with a polymer impregnated powder metal core with the claimed Young's modulus of elasticity between 6.8 to 29.5 million psi, and an injection molded material of the claimed composition with a donor material having an elasticity greater than 2 million psi, attached to the powder metal core.

Claims 9 and 14, the prior art of record does not teach nor suggest, in the claimed combination, an electromagnet for use in a brake with a powder metal housing and core, a bobbin, a coil and a friction material of the claimed composition.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 32-35, 37-43, 45, 46 and 47 are rejected under 35 U.S.C. 103(a) as being unpatentable over Groove (US 4,004,262).

Claim 32 and 33, Grove discloses an electromagnet with a polymer impregnated powder metal housing and core [60, col. 5 lines 30 to 40], a bobbin [70], a coil [64] and a friction material [100] comprising a polymeric donor material [col. 6 lines 7-24].

It would have been obvious to one of ordinary skill in the art at the time the invention was made to adjust the thickness of the rim of the housing to change the magetic properties of the housing, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. In re Aller, 105 USPQ 233.

Claim 34, Groove discloses the electromagnet of claim 32, wherein said polymeric donor material comprises at least one of polyethylenesulfide, epoxy, and phenolic [col. 6 lines 17-25].

Claim 35, Groove discloses the electromagnet of claim 34, wherein said polymeric donor material comprises glass fibers [col. 6 lines 17-25].

Claim 37, Grove discloses an electromagnet with a polymer impregnated powder metal core [60, col. 5 lines 30 to 40] containing a coil [64] with a moldable material [100, col. 6 lines 25 to 30] covering at least a portion of the core, the electromagnet having a magnetic cross section that is constant to within plus or minus three percent [figure 2] wherein the moldable material comprises a donor material [Lexan, epoxy, polyurethane and a natural or synthetic rubber].

Grove fails to teach that the donor material has and elasticity greater than about 2 million psi.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to adjust the elasticity of the donor material [epoxy, polyurethane and a natural or synthetic rubber] used depending on the desired frictional coefficient of the material, since it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art. *In re Boesch*, 617 F.2d 272, 205 USPQ 215 (CCPA 1980).

Claim 38, Groove discloses making a high-density sinter iron powder metal core. It would have been obvious to one having ordinary skill in the art at the time the invention was made to change the composition of the powder metal to a specific Young's modulus to maximize the strength of the core, since it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art. In re Boesch, 617 F.2d 272, 205 USPQ 215 (CCPA 1980).

Claim 39, Groove discloses the claimed invention with the exception of using polyphenylene sulfide as a donor material. It would have been obvious to one of

ordinary skill in the art at the time the invention was made to use polyphenylene sulfide as a donor material, since applicant has not disclosed that this specific donor material solves any stated problem or is for any particular purpose and it

Claims 40 and 41, Grove discloses an electromagnet with a polymer impregnated, a high-density sinter iron powder metal core [60, col. 5 lines 30 to 40] containing a coil [64] with a moldable material [100, col. 6 lines 25 to 30] covering at least a portion of the core, It would have been obvious to one having ordinary skill in the art at the time the invention was made to select a powder core strength within a certain range to adjust the strength of the core depending on the environment for which it is used, since it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art. In re Boesch, 617 F.2d 272,205 USPQ 215 (CCPA 1980).

Claim 42, Groove discloses that the moldable material comprises a donor material with an elasticity [Lexan, epoxy, polyurethane and a natural or synthetic rubber].

Grove fails to teach that the donor material has and elasticity greater than about 2 million psi.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to adjust the elasticity of the donor material [epoxy, polyurethane and a natural or synthetic rubber] used depending on the desired frictional coefficient of the material, since it has been held that discovering an optimum value of a result

effective variable involves only routine skill in the art. *In re Boesch*, 617 F.2d 272, 205 USPQ 215 (CCPA 1980).

Claim 43, Groove discloses making a high-density sinter iron powder metal core. It would have been obvious to one having ordinary skill in the art at the time the invention was made to change the composition of the powder metal to a specific Young's modulus, since it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art. In re Boesch, 617 F.2d 272, 205 USPQ 215 (CCPA 1980).

Claim 45, Grove discloses an electromagnet with a polymer impregnated powder metal core [60, col. 5 lines 30 to 40] containing a coil [64] with a moldable material [100, col. 6 lines 25 to 30] covering at least a portion of a face of said metal core, wherein the moldable material comprises a donor material [Lexan, epoxy, polyurethane and a natural or synthetic rubber].

Grove fails to teach that the donor material has and elasticity greater than about 2 million psi.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to adjust the elasticity of the donor material [epoxy, polyurethane and a natural or synthetic rubber] used depending on the desired frictional coefficient of the material, since it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art. *In re Boesch*, 617 F.2d 272, 205 USPQ 215 (CCPA 1980).

Claim 46, Grove discloses an electromagnet with a polymer impregnated, a high-density sinter iron powder metal core [60, col. 5 lines 30 to 40] containing a coil [64] with a moldable material [100, col. 6 lines 25 to 30] covering at least a portion of a face of said core. It would have been obvious to one having ordinary skill in the art at the time the invention was made to select a powder core strength within a certain range to adjust the strength of the core depending on the environment for which it is used, since it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art. In re Boesch, 617 F.2d 272,205 USPQ 215 (CCPA 1980).

Claim 47, Grove discloses an electromagnet with a polymer impregnated, a high-density sinter iron powder metal core [60, col. 5 lines 30 to 40] containing a coil [64] with a moldable material [100, col. 6 lines 25 to 30] covering at least a portion of a face of said core. It would have been obvious to one having ordinary skill in the art at the time the invention was made to change the composition of the powder metal to a specific Young's modulus to maximize the strength of the core, since it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art. In re Boesch, 617 F.2d 272, 205 USPQ 215 (CCPA 1980).

Response to Arguments

Applicant's arguments, filed 10/15/2007, with respect to the rejection(s) of claim(s) 37 and 45 under 35 U.S.C. 102(b) have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further

consideration, a new ground(s) of rejection under 35 U.S.C. 103(a) is made in view of Grove '262.

Applicant's arguments filed 10/15/2007 have been fully considered but they are not persuasive.

Claims 32-35:

First, Applicant states that although Grove '262 does disclose an electromagnet having a friction member which may or may not comprise a plastic, there is no indication that the friction material is a donor material in the way that term is used in the present application.

In Response, claims 32-35 do not define a unique definition for the term donor material. The frictional material [100] as disclosed in Grove comprises a polymeric donor material [col. 6 lines 7-24].

Second, Applicant states the Examiner has not pointed to any disclosure that, and in fact, Grove '262 does not provide any suggestion that, the rim of the Grove '262 electromagnet should be modified to discover a "optimum or workable range" for the thickness. This apparently was not even considered by Grove and, therefore, it would not have been obvious to one of ordinary skill in the art based on the Grove '262 disclosure.

In response, Grove does not have to disclose a reason for modifying the thickness of the rim. The Examiner provides the motivation for the modification in that adjusting the thickness of the rim of the housing to change the magnetic properties of

the housing. Since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. In re Aller, 105 USPQ 233.

Claims 38, 39, 40-43 and 46-47:

Applicant states that Grove did not even consider the Young's modulus or yield strength characteristics of the electromagnetic core as they are not discussed in the Grove '262 patent. Thus, one of ordinary skill in the art reading the Grove '262 patent would not have found it obvious to find an optimum value of these characteristics by reading the Grove '262 reference.

In response, Grove does not have to disclose a reason for modifying the composition of the powder metal to a specific Young's modulus. The Examiner provides the motivation for the modification in that adjusting the composition of the powder metal to a specific Young's modulus would maximize the strength of the core.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Bernard Rojas whose telephone number is (571) 272-1998. The examiner can normally be reached on M and W-F, 5:30-3:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Elvin G. Enad can be reached on (571) 272-1990. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Br

ELVIN ENAD
SUPERVISORY PATENT EXAMINER
12/26/07